FEDERAL FACILITY AGREEMENT AND CONSENT ORDER (FFA/CO)
NEW SITE IDENTIFICATION (NSI)

Part A – NEW SITE IDENTIFICATION INFORMATION

1.	Site Title: Soil Beneath CFA-617 Wastewater Piping	Site Code: CFA-53 NSI Evaluation Initiation Date: July 18, 2003
2.	**Task Lead For New Site:** Wendell Jolley	Phone: 526-5990
3.	**NSI Coordinator:** Wendell Jolley	Phone: 526-5990
4.	**Initiator or Initial Observer:** Walker F. Howell	Phone: 526-6530

5. **Description of Suspected New Site and Location:**

Building CFA-617 was used from 1981 to 1993 to provide laundry services for radioactively contaminated and uncontaminated laundry and respirator decontamination, cleaning, testing, and maintenance. At its peak operating capacity, the facility serviced approximately 2,700 respiratory devices per month and washed, dried, folded, and repaired up to 226,796 kg (500,000 lb) of laundry annually. As discussed in the *Final Report for the Decontamination and Decommissioning of the Central Facilities Area-617* (INEEL 2003), the CFA-617 Central Laundry and Respirator Facility was demolished in September 2002. During decontamination and decommissioning (D&D) activities, the sanitary waste line under the floor slab was removed. A "Y" joint, located underneath one of the hot washers, showed signs of damage and the soil discoloration indicated leakage had occurred over the timeframe that the facility was in operation (INEEL 2003). Upon completion of the D&D activities, grab soil samples were collected from 11 locations beneath pipe drains, drain line junctions, and washer sumps on October 14, 2002. Attachment 1 shows the locations of soil samples.

Following soil sampling activities, rad surveys were performed in the excavated area on November 27, 2002. Surveys were performed with a Ludlum 2A beta/gamma survey instrument. Results of the surveys, presented in Attachment 2, revealed one localized area with elevated rad concentrations. The hot spot is related to sample CFA01801, #5 shown in Attachment 1. The field work for this activity was completed November 28, 2002, with the D&D being finalized on December 3, 2002 (INEEL 2003).

The soil samples were collected and evaluated for toxicity characteristic leaching procedure (TCLP) metals, volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs); target analyte list (TAL) characteristic leaching procedure (CLP) VOCs and SVOCs; and radionuclides. For the purpose of hazardous waste determination, the results of the TCLP metals, VOCs, and SVOCs analyses were assessed in the final D&D report (INEEL 2003). It was determined that all contaminants were either not detected or below Resource Conservation and Recovery Act (RCRA) regulatory levels for management as a hazardous waste per 40 CFR 261.24 (INEEL 2003).

The TAL and radionuclide results are assessed for risk in this NSI. The summary of this data is presented in Table 1 of Attachment 3. An initial screening was performed on this data and is presented in Table 2 of Attachment 3. The analysis for TAL CLP VOCs and SVOCs indicated that only toluene, methylene chloride, acetone, and bis (2-ethylhexyl) phthalate were present at detectable concentrations. These concentrations are below preliminary remediation goals (PRGs) for human and ecological receptors at 1E-06 risk and are eliminated as a concern.

Samples were analyzed for 22 radionuclides, but the only detected radionuclides include Cs-137 (0.033 to 5.64 pCi/g), Co-60 (0.894 pCi/g to 1.97 pCi/g, K-40 (17.1 pCi/g to 23.0 pCi/g), Ra-226 (0.889 to 1.29 pCi/g), Sr-90 (0.18 pCi/g and 0.288 pCi/g, detected in two locations), and U-235 (0.121 pCi/g, detected in one location). Table 2 of Attachment 3 presents results of the initial soil sample screening. Ra-226 was evaluated in light of previous studies that have shown that Ra-226 levels can be overestimated by gamma spectrometric analysis because of interference from U-235 (Giles 1998a,b). When corrected for this interference, the Ra-226 detections at this site appear to be similar to modeled background as discussed in Giles (1998a,b). Therefore, this radionuclide is eliminated as a potential contaminant of concern. Sample results were screened against Idaho National Laboratory Site background (INEEL 1996) and the 1E-06 PRGs developed from new EPA guidance (EPA 2005). The lowest of either the 1E-06 PRG for outdoor worker or future resident was used. The PRGs for a future resident in 2095 were calculated from EPA's PRGs for the current resident. Based on the initial screening, only Co-60, Cs-137, and Ra-226 concentrations exceed either background or human health PRGs at 1E-06. All radionuclide concentrations are below EBSLs for ecological receptors at 1E-06.

The highest concentration of Cs-137 (5.64 pCi/g) exceeded the INL Site background (1.28 pCi/g) (Rood et al. 1996). The next highest Cs-137 concentration (1.1 pCi/g) is below this background value. Co-60 was detected in two samples, which are both over the initial PRG for 1E-06 risk. The highest detections of both Cs-137 and Co-60 (5.64 and 1.97 pCi/g, respectively) are from sample CFA01801, #5 (see Attachment 1). Both the Cs-137 and Co-60 concentrations at this spot are below the remediation goals calculated for the future resident (2095) at 1E-04 risk of 47.8 pCi/g for Cs-137 and 499,000 pCi/g for Co-60 from the EPA PRGs (EPA 2005).They are also below the remediation goal for the outdoor worker at 1E-04 of 11.3 pCi/g for Cs-137 and 7.2 pCi/g for Co-60 from EPA (EPA 2005). It is accepted that INL Site remediation goals are based on 1E-04 risk to the future resident. However, it is also evident that the concentrations of these radionuclides are at acceptable risk levels for the current worker. In addition, excavated areas have been covered with clean soil, which will provide shielding and further mitigate any exposure to the current worker.

In summary, it is evident that a release associated with the piping occurred at one location under CFA-617 contaminating some soil, most of which was removed and disposed of during the D&D process. As indicated by characterization sampling and surveys at this one location, Cs-137 and Co-60 concentrations are slightly elevated but are at levels that do not pose an unacceptable risk to human health and the environment. It is therefore recommended that this site should be included in the Federal Facility Agreement and Consent Order (FFA/CO) as a "no action site" under Operable Unit 10-08.

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References

40 CFR 261.24, "Toxicity Characteristic," *Code of Federal Regulations*, Office of the Federal Register, February 2006.

EPA, 2005, *Preliminary Remediation Goals for Radionuclides*, http://epa-prgs.ornl.gov/radionuclides/, U.S. Environmental Protection Agency, Web page updated August 17, 2005, Web page visited March 10, 2006.

Giles, J. R., 1998a, "TAN TSF-07 Pond Radium-226 Concentrations and Corrections," Engineering Design File INEEL/INT-98-00505, ER-WAG1-108, Rev. 5, Lockheed Martin Idaho Technologies Company, June 1998.

Giles, J. R., 1998b, "Radium-226 at ARA-01, -02, -16, -23, Waste Area Group 5," Engineering Design File INEEL/INT-98-00850, ER-WAG5-111, Lockheed Martin Idaho Technologies Company, September 1998.

INEEL, 1996, *Executive Summary for Background Dose Equivalent Rates and Surficial Soil Metal and Radionuclide Concentrations for the Idaho National Engineering Laboratory*, INEL-94/0250, Rev. 1, Idaho National Engineering Laboratory, September 1996.

INEEL, 2003, *Final Report for the Decontamination and Decommissioning of the Central Facilities Area-617*, INEEL/EXT-03-00153, Rev, 0, Idaho National Engineering and Environmental Laboratory, February 2003.

Rood, S. M., G. A. Harris, and G. J. White, 1996, *Background Dose Equivalent Rates and Surficial Soil Metal and Radionuclide Concentrations for Idaho National Engineering Laboratory*, INEL-94/0250, Rev. 1, Idaho National Engineering Laboratory, August 1996.

6. **Is the site a Solid Waste Management Unit (SWMU) as defined in OSWER Directive 9502.00-6?** ☒ **Yes** ☐ **No**

7. **Recommendation**

☐ Recommend not including as a new FFA/CO site. This site DOES NOT warrant further investigation, does not meet the criteria for acceptance, and should not be included under FFA/CO Action Plan.

☒ Recommend including as new FFA/CO site. This site DOES meet the criteria for acceptance, may warrant further investigation, and should be included under FFA/CO Action Plan.

Recommended Waste Area Group (WAG) and Operable Unit to which site should be assigned:

WAG: 10 Operable Unit: 10-08

Recommended action for this site:

☒ No Action ☐ No Further Action ☐ Remedial Action under Existing ROD ☐ Track 2 ☐ RI/FS

8. **Responsible Manager Signature:**

Name: Lane Butler Signature: /Butler Date: 3/28/06

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Rev. 06

FEDERAL FACILITY AGREEMENT AND CONSENT ORDER (FFA/CO)
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PART B – FFA/CO RESPONSIBLE PROGRAM MANAGERS (RPM'S) CONCURRENCE	
Site Title: Soil Beneath CFA-617 Wastewater Piping	**Site Code:** CFA-53

DOE-ID FFA/CO RPM Concurrence: ☒ Concur with recommendation. ☐ Do not concur with the recommendation.

Signature: Yolanda K. Jensen Date: April 11, 2006

Explanation:

Although there were low levels of contamination detected at this site, concentrations are below what would drive the need for remedial action. Therefore, I agree that the site should be added as a "No Action" site under OU 10-08.

EPA FFA/CO RPM Concurrence: ☒ Concur with recommendation. ☐ Do not concur with the recommendation.

Signature: R Matthew Wilkening Date: May 3, 2006

Explanation:

Based on the information presented in the section titled Description of Suspected New Site Location it appears that while hazardous constituents are present the concentrations are below levels that would require clean up.

EPA is concerned about a statement in the 6th paragraph of this section that states "remedial goals calculated for future resident @ 1E-04 risk is 47.8 pCi/g ..." Note that clean up goals for INL are stipulated in the RODs, which include 23.3 pCi/g for Cs-137 as the remediation goal. Until there is a mutually agreed on decision to change these goals the goals stated in the ROD remain in effect. Regardless, EPA agrees this Site is in "No Action".

State of Idaho FFA/CO RPM Concurrence: ☐ Concur with recommendation. ☐ Do not concur with the recommendation.

Signature: _____ Date: _____

Explanation:

FEDERAL FACILITY AGREEMENT AND CONSENT ORDER (FFA/CO)
NEW SITE IDENTIFICATION (NSI)

PART B – FFA/CO RESPONSIBLE PROGRAM MANAGERS (RPM'S) CONCURRENCE

Site Title:	Site Code:
Soil Beneath CFA-617 Wastewater Piping	CFA-53

DOE-ID FFA/CO RPM Concurrence: ☒ Concur with recommendation. ☐ Do not concur with the recommendation.

Signature: Richard L. Jensen Date: April 11, 2006

Explanation:

Although there were low levels of contamination detected at this site, concentrations are below what would drive the need for remedial action. Therefore, I agree that the site should be added as a "No Action" site under OU 10-08.

EPA FFA/CO RPM Concurrence: ☐ Concur with recommendation. ☐ Do not concur with the recommendation.

Signature: _____ Date: _____

Explanation:

State of Idaho FFA/CO RPM Concurrence: ☒ Concur with recommendation. ☐ Do not concur with the recommendation.

Signature: Daryl L. Koch Date: July 6, 2006

Explanation:

Most contaminated soil under CFA-617 was removed during D&D activities, and the remainder is at levels that do not pose a risk to human health and the environment. It is recommended that this site be considered a "No Action" site under OU 10-08.

FEDERAL FACILITY AGREEMENT AND CONSENT ORDER (FFA/CO)
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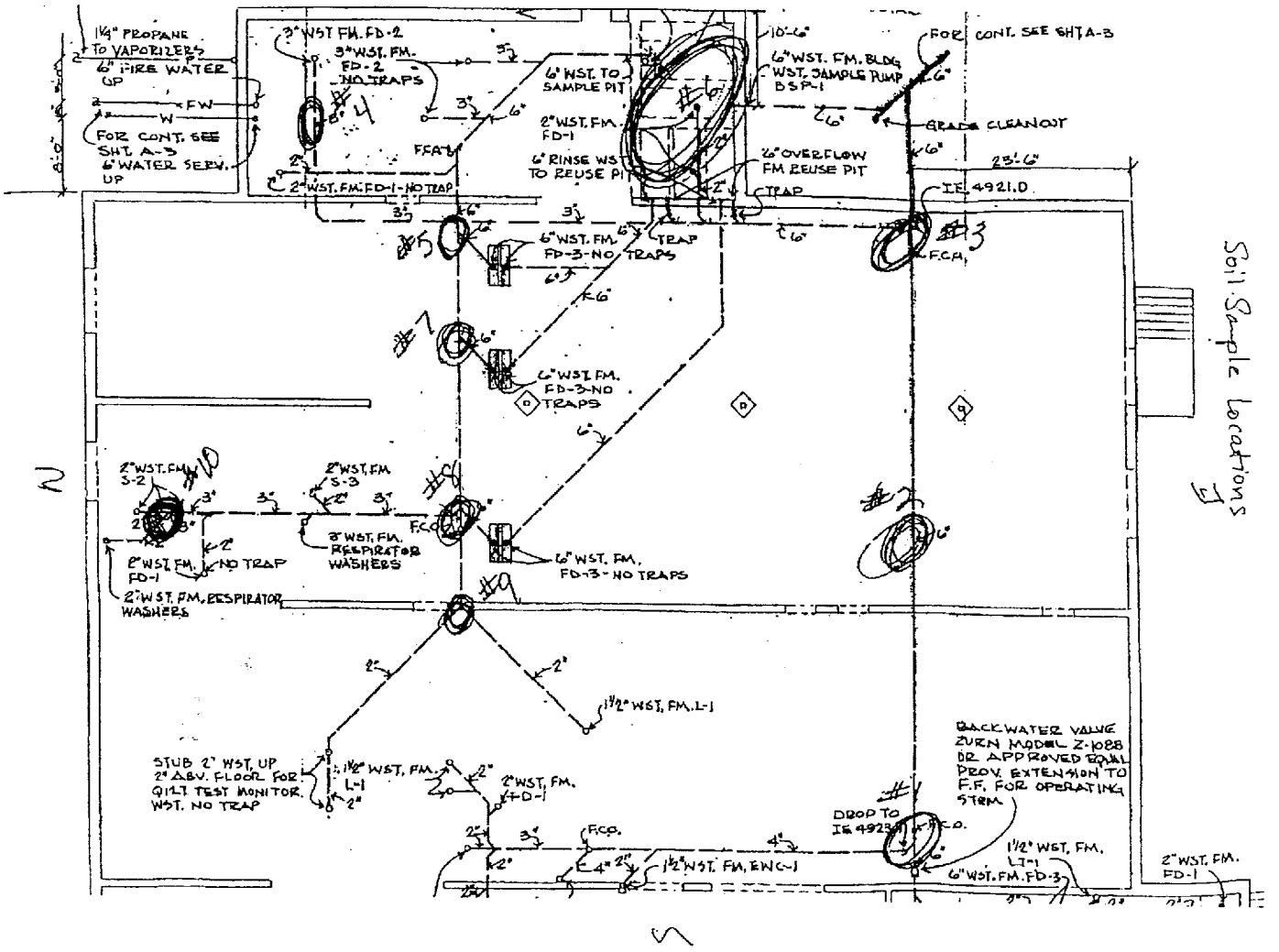
Attachment 1
Soil Sample Locations



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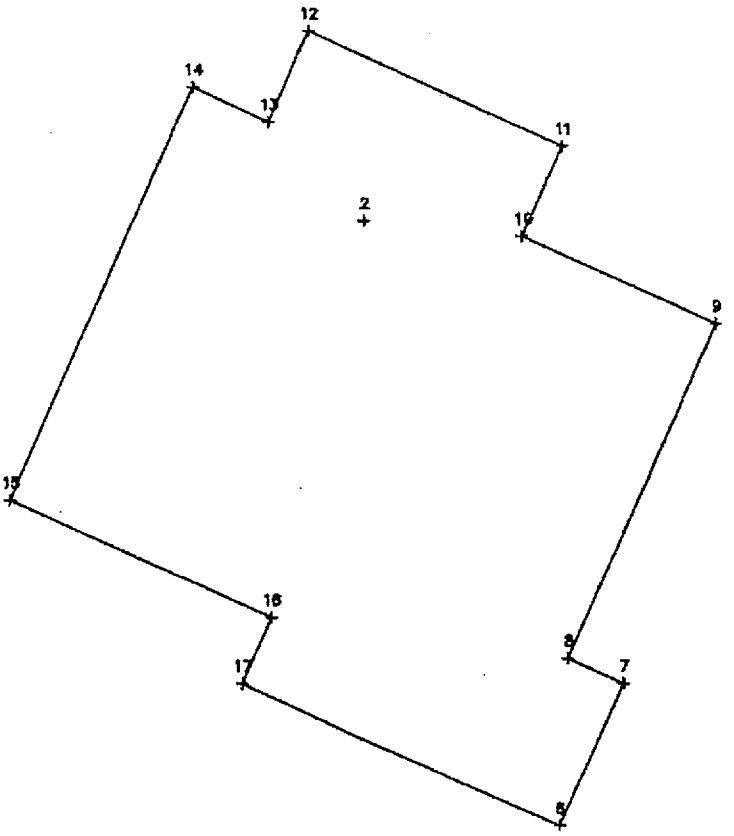
Attachment 2
Survey Results

CFA-617, BUILDING FOOTPRINT
AND RADIATION SPIKE SAMPLE
SURVEY DATE: 11/27/02
SURVEYED BY: SUTHERLIN AND GRADY
DATUMS: NAD-83 STATE PLANE AND
NAVD 1988 VERTICAL

SCALE: 1"=30'



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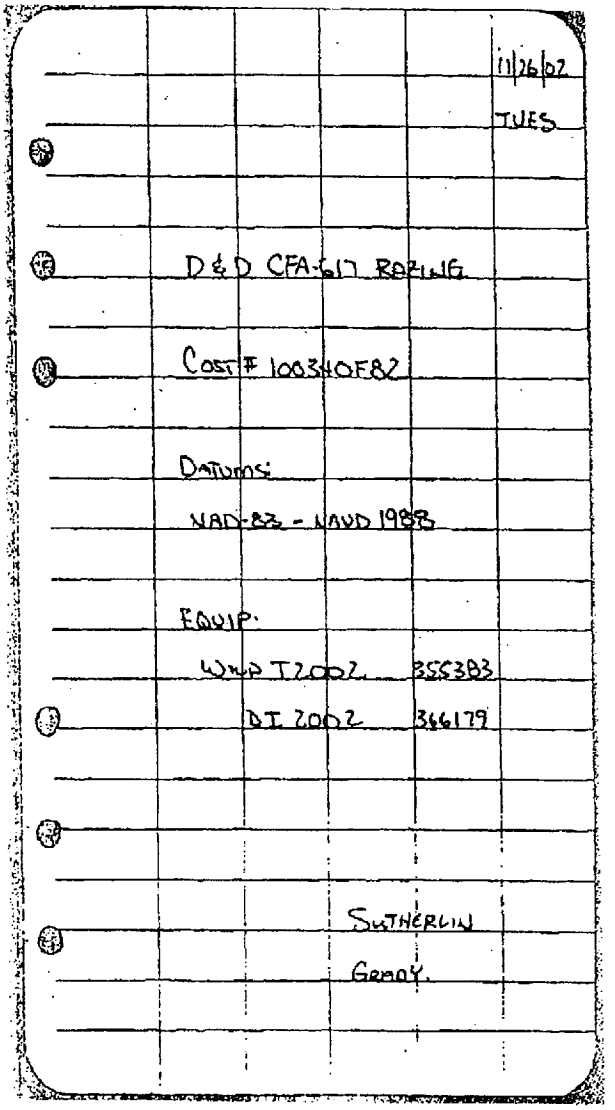

FEDERAL FACILITY AGREEMENT AND CONSENT ORDER (FFA/CO)
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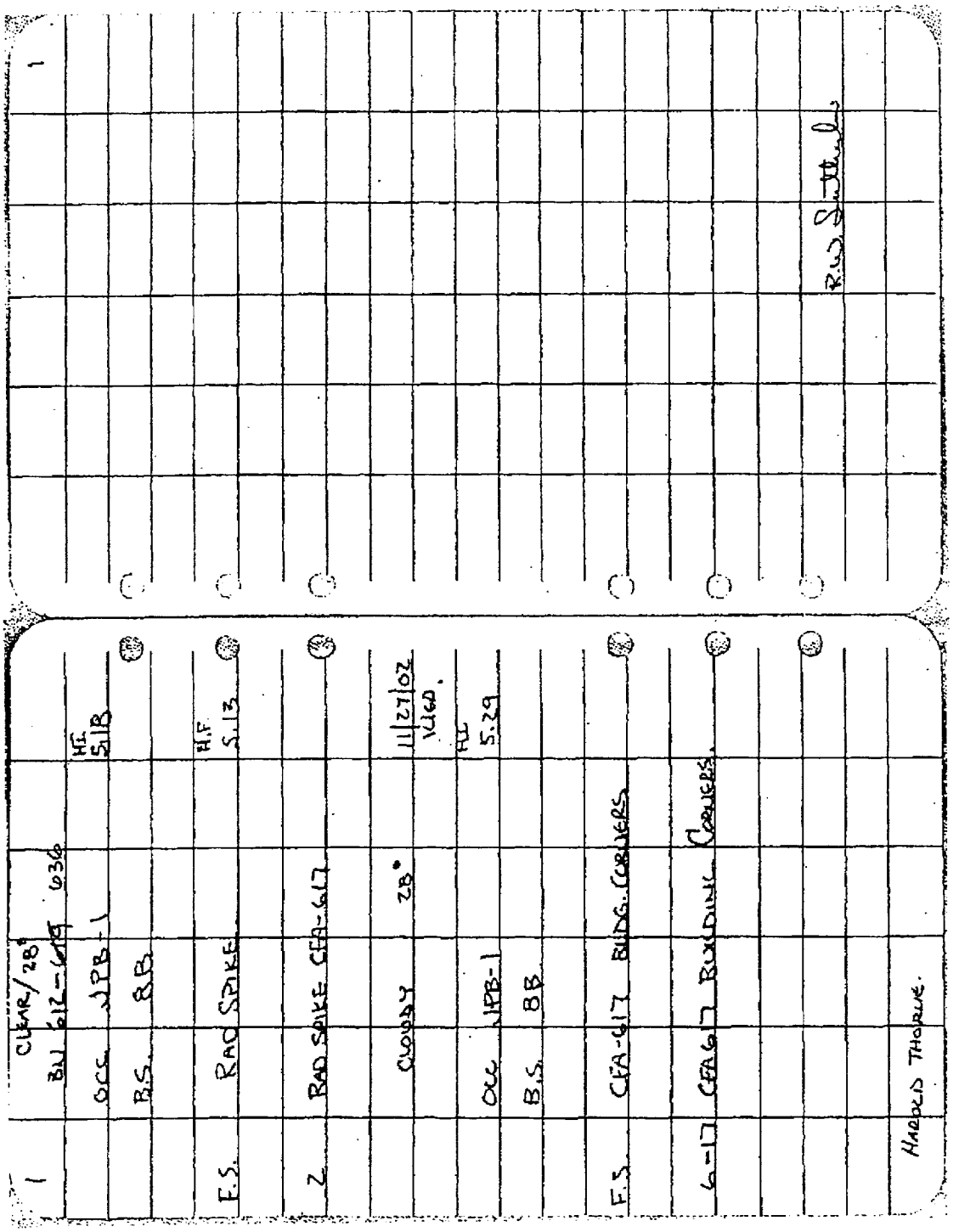

ATTACHMENT 3
Data Summary Results

Table 1. Summary of sampling data at CFA-617.

Radionuclides (pCi/g)		
Americium-241	Number of samples	11
	Number of detects	0
	Min of Concentration	-0.104
	Max of Concentration	0.112
Antimony-125	Number of samples	11
	Number of detects	0
	Min of Concentration	-0.0219
	Max of Concentration	0.0739
Cerium-144	Number of samples	11
	Number of detects	0
	Min of Concentration	-0.0756
	Max of Concentration	0.0562
Cesium-134	Number of samples	11
	Number of detects	0
	Min of Concentration	-0.011
	Max of Concentration	0.0172
Cesium-137	Number of samples	11
	Number of detects	6
	Min of Concentration	-0.021
	Max of Concentration	5.64
Cobalt-58	Number of samples	11
	Number of detects	0
	Min of Concentration	-0.0179
	Max of Concentration	0.00654
Cobalt-60	Number of samples	11
	Number of detects	2
	Min of Concentration	-0.0159
	Max of Concentration	1.97
Europium-152	Number of samples	11
	Number of detects	0
	Min of Concentration	-0.0777
	Max of Concentration	0.0187
Europium-154	Number of samples	11
	Number of detects	0
	Min of Concentration	-0.0418
	Max of Concentration	0.0635
Europium-155	Number of samples	11
	Number of detects	0
	Min of Concentration	0
	Max of Concentration	0.0975
Gross alpha	Number of samples	11
	Number of detects	11
	Min of Concentration	13.7
	Max of Concentration	27.6

Table 1. (continued).

Gross beta	Number of samples	11
	Number of detects	11
	Min of Concentration	19.8
	Max of Concentration	43.3
Manganese-54	Number of samples	11
	Number of detects	0
	Min of Concentration	-0.00706
	Max of Concentration	0.0266
Niobium-95	Number of samples	11
	Number of detects	0
	Min of Concentration	0
	Max of Concentration	0.0322
Potassium-40	Number of samples	11
	Number of detects	11
	Min of Concentration	17.1
	Max of Concentration	23
Radium-226	Number of samples	11
	Number of detects	11
	Min of Concentration	0.889
	Max of Concentration	1.29
Ruthenium-103	Number of samples	11
	Number of detects	0
	Min of Concentration	-0.0125
	Max of Concentration	0.0106
Ruthenium-106	Number of samples	11
	Number of detects	0
	Min of Concentration	-0.147
	Max of Concentration	0.146
Silver-108 meta-stable	Number of samples	11
	Number of detects	0
	Min of Concentration	-0.0183
	Max of Concentration	0.0205
Silver-110 meta-stable	Number of samples	11
	Number of detects	0
	Min of Concentration	-0.0154
	Max of Concentration	0.00711
Strontium-90	Number of samples	11
	Number of detects	2
	Min of Concentration	-0.0503
	Max of Concentration	0.288
Uranium-235	Number of samples	11
	Number of detects	1
	Min of Concentration	0.0285
	Max of Concentration	0.122
Zinc-65	Number of samples	11
	Number of detects	0
	Min of Concentration	-0.091
	Max of Concentration	0.0369

Table 1. (continued).

Zirconium-95	Number of samples	11
	Number of detects	0
	Min of Concentration	-0.0203
	Max of Concentration	0.0414
Organics (ug/kg)		
1,1,1-Trichloroethane	Number of samples	11
	Number of detects	0
	Min of Concentration	5.1
	Max of Concentration	5.2
1,1,2,2-Tetrachloroethane	Number of samples	11
	Number of detects	0
	Min of Concentration	5.1
	Max of Concentration	5.2
1,1,2-Trichloroethane	Number of samples	11
	Number of detects	0
	Min of Concentration	5.1
	Max of Concentration	5.2
1,1-Dichloroethane	Number of samples	11
	Number of detects	0
	Min of Concentration	5.1
	Max of Concentration	5.2
1,1-Dichloroethene	Number of samples	11
	Number of detects	0
	Min of Concentration	5.1
	Max of Concentration	5.2
1,2,4-Trichlorobenzene	Number of samples	11
	Number of detects	0
	Min of Concentration	340
	Max of Concentration	350
1,2-Dichlorobenzene	Number of samples	12
	Number of detects	0
	Min of Concentration	5.2
	Max of Concentration	350
1,2-Dichloroethane	Number of samples	11
	Number of detects	0
	Min of Concentration	5.1
	Max of Concentration	5.2
1,2-Dichloroethene (cis and trans)	Number of samples	11
	Number of detects	0
	Min of Concentration	10
	Max of Concentration	10
1,2-Dichloropropane	Number of samples	11
	Number of detects	0
	Min of Concentration	5.1
	Max of Concentration	5.2
1,3-Dichlorobenzene	Number of samples	12
	Number of detects	0
	Min of Concentration	5.2
	Max of Concentration	350

Table 1. (continued).

1,4-Dichlorobenzene	Number of samples	12
	Number of detects	0
	Min of Concentration	5.2
	Max of Concentration	350
2,2'-Oxybis(1-chloropropane)	Number of samples	11
	Number of detects	0
	Min of Concentration	340
	Max of Concentration	350
2,4,5-Trichlorophenol	Number of samples	11
	Number of detects	0
	Min of Concentration	340
	Max of Concentration	350
2,4,6-Trichlorophenol	Number of samples	11
	Number of detects	0
	Min of Concentration	340
	Max of Concentration	350
2,4-Dichlorophenol	Number of samples	11
	Number of detects	0
	Min of Concentration	340
	Max of Concentration	350
2,4-Dimethylphenol	Number of samples	11
	Number of detects	0
	Min of Concentration	340
	Max of Concentration	350
2,4-Dinitrophenol	Number of samples	11
	Number of detects	0
	Min of Concentration	1600
	Max of Concentration	1700
2,4-Dinitrotoluene	Number of samples	11
	Number of detects	0
	Min of Concentration	340
	Max of Concentration	350
2,6-Dinitrotoluene	Number of samples	11
	Number of detects	0
	Min of Concentration	340
	Max of Concentration	350
2-Butanone	Number of samples	11
	Number of detects	0
	Min of Concentration	20
	Max of Concentration	21
2-Chloronaphthalene	Number of samples	11
	Number of detects	0
	Min of Concentration	340
	Max of Concentration	350
2-Chlorophenol	Number of samples	11
	Number of detects	0
	Min of Concentration	340
	Max of Concentration	350

Table 1. (continued).

2-Hexanone	Number of samples	11
	Number of detects	0
	Min of Concentration	20
	Max of Concentration	21
2-Methylnaphthalene	Number of samples	11
	Number of detects	0
	Min of Concentration	340
	Max of Concentration	350
2-Methylphenol	Number of samples	11
	Number of detects	0
	Min of Concentration	340
	Max of Concentration	350
2-Nitroaniline	Number of samples	11
	Number of detects	0
	Min of Concentration	1600
	Max of Concentration	1700
2-Nitrophenol	Number of samples	11
	Number of detects	0
	Min of Concentration	340
	Max of Concentration	350
3,3'-Dichlorobenzidine	Number of samples	11
	Number of detects	0
	Min of Concentration	1600
	Max of Concentration	1700
3-Nitroaniline	Number of samples	11
	Number of detects	0
	Min of Concentration	1600
	Max of Concentration	1700
4,6-Dinitro-2-methylphenol	Number of samples	11
	Number of detects	0
	Min of Concentration	1600
	Max of Concentration	1700
4-Bromophenyl phenyl ether	Number of samples	11
	Number of detects	0
	Min of Concentration	340
	Max of Concentration	350
4-Chloro-3-methylphenol	Number of samples	11
	Number of detects	0
	Min of Concentration	340
	Max of Concentration	350
4-Chloroaniline	Number of samples	11
	Number of detects	0
	Min of Concentration	340
	Max of Concentration	350
4-Chlorophenyl phenyl ether	Number of samples	11
	Number of detects	0
	Min of Concentration	340
	Max of Concentration	350

Table 1. (continued).

4-Methyl-2-pentanone	Number of samples	11
	Number of detects	0
	Min of Concentration	20
	Max of Concentration	21
4-Methylphenol	Number of samples	11
	Number of detects	0
	Min of Concentration	670
	Max of Concentration	710
4-Nitroaniline	Number of samples	11
	Number of detects	0
	Min of Concentration	1600
	Max of Concentration	1700
4-Nitrophenol	Number of samples	11
	Number of detects	0
	Min of Concentration	1600
	Max of Concentration	1700
Acenaphthene	Number of samples	11
	Number of detects	0
	Min of Concentration	340
	Max of Concentration	350
Acenaphthylene	Number of samples	11
	Number of detects	0
	Min of Concentration	340
	Max of Concentration	350
Acetone	Number of samples	11
	Number of detects	5
	Min of Concentration	3.7
	Max of Concentration	21
Anthracene	Number of samples	11
	Number of detects	0
	Min of Concentration	340
	Max of Concentration	350
Benzene	Number of samples	11
	Number of detects	0
	Min of Concentration	5.1
	Max of Concentration	5.2
Benzo(a)anthracene	Number of samples	11
	Number of detects	0
	Min of Concentration	340
	Max of Concentration	350
Benzo(a)pyrene	Number of samples	11
	Number of detects	0
	Min of Concentration	340
	Max of Concentration	350
Benzo(b)fluoranthene	Number of samples	11
	Number of detects	0
	Min of Concentration	340
	Max of Concentration	350

Table 1. (continued).

Benzo(g,h,i)perylene	Number of samples	11
	Number of detects	0
	Min of Concentration	340
	Max of Concentration	350
Benzo(k)fluoranthene	Number of samples	11
	Number of detects	0
	Min of Concentration	340
	Max of Concentration	350
Bis(2-Chloroethoxy) methane	Number of samples	11
	Number of detects	0
	Min of Concentration	340
	Max of Concentration	350
bis(2-Chloroethyl) ether	Number of samples	11
	Number of detects	0
	Min of Concentration	340
	Max of Concentration	350
bis(2-Ethylhexyl) phthalate	Number of samples	11
	Number of detects	2
	Min of Concentration	83
	Max of Concentration	430
Bromodichloromethane	Number of samples	11
	Number of detects	0
	Min of Concentration	5.1
	Max of Concentration	5.2
Bromoform	Number of samples	11
	Number of detects	0
	Min of Concentration	5.1
	Max of Concentration	5.2
Bromomethane	Number of samples	11
	Number of detects	0
	Min of Concentration	10
	Max of Concentration	10
Butylbenzylphthalate	Number of samples	11
	Number of detects	1
	Min of Concentration	190
	Max of Concentration	350
Carbazole	Number of samples	11
	Number of detects	0
	Min of Concentration	340
	Max of Concentration	350
Carbon disulfide	Number of samples	11
	Number of detects	0
	Min of Concentration	5.1
	Max of Concentration	5.2
Carbon tetrachloride	Number of samples	11
	Number of detects	0
	Min of Concentration	5.1
	Max of Concentration	5.2

Table 1. (continued).

Chlorobenzene	Number of samples	11
	Number of detects	0
	Min of Concentration	5.1
	Max of Concentration	5.2
Chlorodibromomethane	Number of samples	11
	Number of detects	0
	Min of Concentration	5.1
	Max of Concentration	5.2
Chloroethane	Number of samples	11
	Number of detects	0
	Min of Concentration	10
	Max of Concentration	10
Chloroform	Number of samples	11
	Number of detects	0
	Min of Concentration	5.1
	Max of Concentration	5.2
Chloromethane	Number of samples	11
	Number of detects	0
	Min of Concentration	10
	Max of Concentration	10
Chrysene	Number of samples	11
	Number of detects	0
	Min of Concentration	340
	Max of Concentration	350
cis-1,3-Dichloropropene	Number of samples	11
	Number of detects	0
	Min of Concentration	5.1
	Max of Concentration	5.2
Dibenz(a,h)anthracene	Number of samples	11
	Number of detects	0
	Min of Concentration	340
	Max of Concentration	350
Dibenzofuran	Number of samples	11
	Number of detects	0
	Min of Concentration	340
	Max of Concentration	350
Diethylphthalate	Number of samples	11
	Number of detects	0
	Min of Concentration	340
	Max of Concentration	350
Dimethyl phthalate	Number of samples	11
	Number of detects	0
	Min of Concentration	340
	Max of Concentration	350
Di-n-butylphthalate	Number of samples	11
	Number of detects	0
	Min of Concentration	340
	Max of Concentration	350

Table 1. (continued).

Di-n-octyl phthalate	Number of samples	11
	Number of detects	0
	Min of Concentration	340
	Max of Concentration	350
Ethylbenzene	Number of samples	11
	Number of detects	0
	Min of Concentration	5.1
	Max of Concentration	52
Fluoranthene	Number of samples	11
	Number of detects	0
	Min of Concentration	340
	Max of Concentration	350
Fluorene	Number of samples	11
	Number of detects	0
	Min of Concentration	340
	Max of Concentration	350
Hexachlorobenzene	Number of samples	11
	Number of detects	0
	Min of Concentration	340
	Max of Concentration	350
Hexachlorobutadiene	Number of samples	11
	Number of detects	0
	Min of Concentration	340
	Max of Concentration	350
Hexachlorocyclopentadiene	Number of samples	11
	Number of detects	0
	Min of Concentration	1600
	Max of Concentration	1700
Hexachloroethane	Number of samples	11
	Number of detects	0
	Min of Concentration	340
	Max of Concentration	350
Indeno(1,2,3-cd)pyrene	Number of samples	11
	Number of detects	0
	Min of Concentration	340
	Max of Concentration	350
Isophorone	Number of samples	11
	Number of detects	0
	Min of Concentration	340
	Max of Concentration	350
Methylene chloride	Number of samples	11
	Number of detects	0
	Min of Concentration	5.1
	Max of Concentration	5.2
Naphthalene	Number of samples	11
	Number of detects	0
	Min of Concentration	340
	Max of Concentration	350

Table 1. (continued).

Nitrobenzene	Number of samples	11
	Number of detects	0
	Min of Concentration	340
	Max of Concentration	350
N-Nitroso-di-n-dipropylamine	Number of samples	11
	Number of detects	0
	Min of Concentration	340
	Max of Concentration	350
N-Nitrosodiphenylamine	Number of samples	11
	Number of detects	0
	Min of Concentration	340
	Max of Concentration	350
o-Xylene	Number of samples	1
	Number of detects	0
	Min of Concentration	5.2
	Max of Concentration	5.2
Pentachlorophenol	Number of samples	11
	Number of detects	0
	Min of Concentration	1600
	Max of Concentration	1700
Phenanthrene	Number of samples	11
	Number of detects	0
	Min of Concentration	340
	Max of Concentration	350
Phenol	Number of samples	11
	Number of detects	0
	Min of Concentration	340
	Max of Concentration	350
Pyrene	Number of samples	11
	Number of detects	0
	Min of Concentration	340
	Max of Concentration	350
Styrene	Number of samples	11
	Number of detects	0
	Min of Concentration	5.1
	Max of Concentration	5.2
Tetrachloroethene	Number of samples	11
	Number of detects	0
	Min of Concentration	5.1
	Max of Concentration	5.2
Toluene	Number of samples	11
	Number of detects	3
	Min of Concentration	0.38
	Max of Concentration	5.2
trans-1,3-Dichloropropene	Number of samples	11
	Number of detects	0
	Min of Concentration	5.1
	Max of Concentration	5.2

Table 1. (continued).

Trichloroethene	Number of samples	11
	Number of detects	0
	Min of Concentration	5.1
	Max of Concentration	5.2
Vinyl chloride	Number of samples	11
	Number of detects	0
	Min of Concentration	5.1
	Max of Concentration	5.2
Xylene	Number of samples	11
	Number of detects	0
	Min of Concentration	10
	Max of Concentration	10
Xylene, meta and/or para isomers	Number of samples	1
	Number of detects	0
	Min of Concentration	5.2
	Max of Concentration	5.2

Table 2. Initial screening for human and ecological risk.

Detected Contaminants	Max Source Concentration (mg/kg or pCi/g)	Background Concentration for 95/95 for Grab Samples[a] (mg/kg or pCi/g)	Max Concentration > Background[b]?	Nontoxic Metal?	PRG 1E-06 or HQ>0.1 (mg/kg or pCi/g)[c]	Max Concentration > PRG?	Screening Value[d] (mg/kg or pCi/g)	Max Concentration > screening values?	Does contaminant concentration exceed background or PRGs	
									HHRA	ERA
Cs-137	5.64E+00	1.28E+00	Yes	No	1.13E-01	Yes	4.95E+03	No	**Yes**	No
Co-60	1.97E+00	NA	NA	No	6.02E-02	Yes	1.18E+03	No	**Yes**	No
K-40	2.30E+01	3.20E+01	No	No	1.08E-01	Yes	No EBSL	No EBSL	No	No EBSL
Ra-226	1.29E+00	NA	NA	No	1.24E-02	Yes	2.04E+01	No	**Yes**	No
Sr-90	2.88E-01	7.60E-01	No	No	3.31E+00	No	3.34E+03	No	No	No
U-235	1.21E-01	NA	NA	No	2.05E-01	No	2.27E+01	No	No	No
Acetone	1.50E-02	NA	NA	No	1.00E+04	No	5.53E-01	No	No	No
bis(2-ethylhexyl)phthalate	4.30E-01	NA	NA	No	3.50E+01	No	No EBSL	No EBSL	No	No EBSL
Butylbenzylphthalate	1.90E-01	NA	NA	No	1.20E+03	No	1.43E+01	No	No	No
Toluene	6.70E-04	NA	NA	No	5.20E+02	No	6.04E+01	No	No	No

a. Background values are taken from Rood et al. (1996) for the 95/95% UTL for grab samples.
b. Nontoxic metals are eliminated as per Cirone (1991)
c. PRGs for nonradionuclides are taken from Region 9 PRGs (EPA 2006) and for radionuclides from EPA (2005).
d. Screening values are taken from VanHorn and Stacey (2004).

EBSL = ecologically based screening level.
HHRA = human health risk assessment.
ERA = ecological risk assessment.

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